

REMARKS/ARGUMENTS

Prior to this Amendment, claims 1-19 were pending in the application.

Claim 1 is amended to include the limitations of dependent claims 4 and 5, which are canceled, and also to clarify that the a client application on the additional nodes in the cluster use the repository agent on their node to interface the primary repository manager when accessing cluster configuration data. Claim 20, which depends from claim 1, is added to protect the inventive feature of allowing a client application to register with the primary repository manager for notifications of changes of all or portions of the cluster configuration data. No new matter is added with support found at least in paragraphs [0023] and [0028].

Independent claim 11 is amended to include the limitations of dependent claim 12, which is canceled.

Similarly, independent claim 14 is amended to include the limitations of dependent claim 15, which is canceled.

Independent claim 17 is amended to include the limitations of dependent claim 19, which is canceled.

Claims 1-3, 6-11, 13, 14, 16-18, and 20 remain for consideration by the Examiner.

Rejections Under 35 U.S.C. §102

The May 12, 2005 Office Action retained the rejection of claims 1-19 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,594,786 ("Connelly"). This rejection is respectfully traversed based on the following remarks.

In the Response to Amendment portion of the Office Action, the Examiner indicated that he was not persuaded by Applicants' arguments provided concerning claim 1 and "a system for providing real-time cluster configuration data" because the Examiner was not giving this language patentable weight because it was found in the preamble of claim 1. However, Applicants assert that much of the argument for allowing claim 1 was addressing the fact that claim 1 is directed to a system that included primary and secondary nodes configured to achieve the task of providing real time cluster configuration data and Connelly was directed to a different task that

resulted in Connelly not teaching the structural limitations of claim 1, i.e., the claimed primary and secondary nodes.

Claim 1 is amended to further stress these differences between the claimed system and Connelly's teaching by including an additional node in each cluster that runs a repository agent that forwards all write/update requests to the primary repository manager and a client application that uses the repository agent as an interface to the primary repository manager "when accessing the first set of cluster configuration data." After this amendment, the accessing of cluster configuration data by nodes in the cluster via the primary repository manager is very clearly not just in the preamble language. Connelly fails to teach accessing cluster configuration data at all let alone a client application using a repository agent as its interface to a repository manager on a primary node to access such data. Hence, Connelly fails to anticipate claim 1.

Further, as discussed in the prior response, the Office Action states that Connelly teaches a system for providing cluster configuration data and cites Figure 1 of Connelly. Applicants disagree with this interpretation of Connelly. As stated in the Field of the Invention, Connelly is directed to "a method and apparatus for measuring availability of ... clusters of computer systems." The Connelly Background only describes problems with measuring availability in clustered server systems not with providing real-time cluster configuration data. Further, in Figure 1, primary server 4 and backup server 6 are described in detail with reference to HA agents 20b, 20c in Figure 2 as maintaining "availability data" (see, for example, Connelly at col. 6, lines 52-65). Hence, Figure 1 teaches a system for sharing and maintaining availability data in a clustered server system NOT providing real-time cluster configuration data.

The Response to Amendment portion of the Office Action asserts that Connelly "teaches real-time monitoring and error detection for enterprise cluster system that include configuration changes in each node" at col. 8, lines 22-32. Applicants' disagree with this construction of Connelly. At col. 8, lines 22-32, Connelly states:

"In the preferred embodiment, the event monitoring service 40 is a system monitoring application designed to facilitate real-time monitoring and error detection for enterprise systems, such as cluster C. In an alternative embodiment, the real-time monitoring of cluster resources could be designed into the HA agent 20. In particular,

the event monitoring service 40 can monitor the operational status of nodes and packages within a cluster to report on the availability of the nodes, packages and of the cluster as a whole.”

Applicants can find no teaching in this statement that cluster configuration data is monitored or collected. Certainly, there is no teaching in this portion of Connelly that a primary and secondary node are provided each with a repository for storing cluster configuration data and a secondary repository manager on the secondary node cooperating with a primary repository manager on the primary node to maintain the cluster configuration data in its repository consistent with the cluster configuration data in the repository of the primary node. Hence, Applicants believe that Connelly does not support an anticipation rejection of claim 1 (nor a rejection based on obviousness as each element of claim 1 is not shown or suggested).

The Office Action further states that a repository manager is taught in primary and secondary nodes of a cluster with Connelly's HA agents 4 and 6 (i.e., “HA 20b” and “HA 20c”) with reference to col. 6, lines 23-38. Applicants disagree. Agents 4, 6 are described in col. 6, lines 31-38 with the phrase “Each HA agent 20 monitors the availability of the system on which it is installed...” and at col. 6, lines 55-58 with “During normal operations, each HA agent 20 maintains availability data locally.” As can be seen, Connelly is addressing a different problem, i.e., how to measure and share availability data, than that addressed by the system of claim 1, and the HA agents 20 fail to teach the claimed repository managers.

Further, there is no teaching in Connelly that the primary node includes a primary repository manager “storing a first set of cluster configuration data in the primary data repository” or that the backup node includes a secondary repository manager “storing a second set of cluster configuration data in the primary data repository.” The Office Action also states Connelly teaches keeping availability data consistent with the HA agents and HA server 22. Applicants disagree because Connelly does not teach storing cluster configuration data in repositories on primary and secondary nodes. Further, Connelly fails to shown having the secondary repository manager cooperate with the primary repository manager to maintain the cluster configuration data consistent.

In contrast, Connelly teaches the use of a single configuration database 64 that "tracks cluster configuration changes as they are received from the HA agents 20" (see, Connelly at col. 11, lines 16-34). The HA agents of Connelly may report changes in configuration data HAM server daemon 60 for storage in configuration database 64 as shown in Figure 5 but does not teach storing such data at each node associated with the HA agents. With reference to Figures 2 and 5, there is no discussion in Connelly of the need for two such databases, keeping such databases within a cluster, placing this cluster configuration data in consistent form on the primary and backup nodes 4, 6 of Figure 1 or managing such data with HA agents 20.

In light of the above remarks, Applicants assert that the rejection of claim 1 is not supported by Connelly and request that the Examiner withdraw the rejection. Claims 2, 3, 6-10, and 20 depend from claim 1 and are believed allowable as depending from an allowable base claim. Further, claim 20 calls for the client application to register an interest in a portion of the cluster configuration data and for the primary repository manager to notify the client application of changes to that data. This feature of the invention is not shown or suggested by Connelly.

The reasons for allowing claim 1 are believed applicable to independent claims 11, 14, and 17, and Applicants request that the rejection of these claims based on Connelly be withdrawn.

Additionally, as to claims 11, 14, and 17, the Office Action states that Connelly teaches a method including "choosing" a primary node and a secondary node within a cluster each having a repository manager. The Office Action cites HAs 20b, 20c of Figure 2 and col. 6, lines 23-38, but at these citations, Connelly teaches a system having a primary node and a backup node but provides no teaching of choosing or assigning these nodes. Significantly, Connelly fails to teach maintaining consistent cluster configuration data on the chosen primary and secondary nodes.

The Response to Amendments asserted that choosing of a primary and a secondary node were taught in Connelly in col. 6, lines 23-38 and also at col. 11, lines 17-34. Connelly's teaching at col. 6, lines 23-38 was previously address, and at col. 11, lines 17-34, Connelly is discussing the use of a configuration database 64 to track configuration changes in the number of nodes in a cluster for use in an availability

computation. There is no teaching of choosing a primary and secondary node for use in maintaining primary and secondary repositories. For this additional reason, claims 11, 14, and 17 are believed allowable over Connelly.

Claims 13, 16, and 18 depend from claims 11, 14, and 17 and are believed allowable as depending from an allowable base claim.

Claim 17 as amended also calls for means for causing write/update information to be written by the primary and secondary repository managers in the cluster configuration data and means for validating completion of the entry of data only when the information is written by both repository managers, thereby maintaining consistency between the repositories of the cluster configuration data. Connelly fails to teach or suggest this limitation. In the Office Action these limitations were said to be shown in col. 5, lines 12-34 and lines 36-47, at col. 9, line 38 to col. 10, line 26, and at col. 15, lines 48 to "col., line 10". Applicants could find no suggestion of the specific limitations provided in claim 17 but only descriptions of what a cluster of nodes is generally. Applicants request that the Examiner provide specific references in Connelly showing writing update information to a primary and secondary repository of cluster configuration and not validating entry of such information until it is successfully written in both repositories or that the rejection of claim 17 be withdrawn.

Conclusions

In view of the remarks provided in this Amendment, Applicants request that a timely Notice of Allowance be issued in this case.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

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